An Integrated and Collaborative eHealth System for the Mental Health Services

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***Abstract*—As reported by the World Health Organization, depression is a disorder that can be reliably diagnosed and treated in primary care, with preferred treatment consisting of basic psychosocial support combined with antidepressant medication or psychotherapy, such as cognitive behaviour therapy, interpersonal psychotherapy or problem solving treatment. The European project MasterMind, started in March 2014 and, with 36 months duration, is an observational study aiming to implement collaborative care services and cCBT treatment in order to improve the care of people suffering from depression. The services will be tested in 15 European regions, for a total target of over 5280 patients and 141 professionals involved.**

Keywords - Integrated care, Depression, General Pratictioner, Collaborative Care, cCBT.

I. INTRODUCTION

Reducing quality of life and impairing social and personal relationships, a depressive disorder may start early in life and the course is often recurrent [1][2][3]. The World Heath Organization also said that depression is a treatable pathology [4], but most people with depression do not receive the care and support they need. Frequently, depression is not recognized and therefore not treated, and this exposes those affected to various negative consequences. In Italy, only the 29% of patients affected by depression receive treatment the same year in which the pathology appears [5].

The Local Health Authority n° 9 Treviso is one of the pilot of the MasterMind Project [6]. The European project MasterMind, started in March 2014 and, with 36 months duration, has the aim to implement collaborative care services and cCBT (computerized Cognitive Behaviour Therapy) treatment in order to improve the care of people suffering from depression.

MasterMind is an observational study and organizational improvement of the services, which aims to implement and disseminate care activities via tele psychiatry. The MasterMind Project was created to promote the development of guidelines for the application of tele psychiatry services in Europe in a safe, effective and efficient way. The project includes:

- The organization according to the model of collaborative care of the relationship between mental health services and primary care or General Practitioners (GPs) based on the use of tele psychiatry with data sharing, recruitment procedures agreed upon and use of videoconferencing;
- A service of Cognitive Behavioural Therapy available online (computerized Cognitive Behavioural Therapy - cCBT).

The services will be tested in 15 European regions and the trial evaluation will be developed using a rigorous method (Model for Assessment of Telemedicine MAST [7]) that follows the Health Technology Assessment (HTA) rationale.

In adherence to the project, the Local Health Authority n. 9 has the objectives to:

- Define an informative system (clinical database) shared between specialists services (Mental Health Department) and General Practitioners
- Supply to the General Practitioners diagnostic elements and guidelines for diagnosis and treatment
- Use computerized assessment tools (questionnaires and/or interviews) whose results can be accessible to all professionists involved in the network
- Provide possibility of advice, also with a videoconferencing system, for the cases discussion and for the evaluation of therapeutic plans.

The rest of the paper is structured as follows. In Section II, we mention the theories and methods used. Section III presents the results and discussion, and we conclude proposing next activities in Section IV.

II. THEORY/METHODS

Improving the collaborative care between the primary and secondary care and giving new tools to the patients to support them in the management of their disease is the core of the Veneto's pilot initiative. The collaborative care between General Practitioners and Mental Health Professionals has the scope to allow the progressive education of General Practitioners in the identification of

 ISBN: 978-1-61208-470-1

first symptoms of depression and give to the primary care the support of highly skilled specialists when required during the treatment of a patient.

On the other hand, giving the specific tools to the patients, the system has the aim to support them in the management of their disease putting them in contact with their clinician, when necessary.

The project is on going and currently the videoconference service and the cCBT treatment have been implemented and are in use. At the end of the study (December 2016), the results of the implementation and introduction of the use of these services will be evaluated through an HTA method: the MAST will be applied with a particular focus on the organizational and economic aspects, in order to measure the impact on the organization involved, on the patients treated and on the operating clinical actors.

III. RESULTS/DISCUSSION

In accordance with the project objectives, the Local Health Authority n.9 of Treviso has created a network between General Practitioners and specialists through the territorial information service and videoconferencing (CCVC), for the early identification of depressive disorder and an effective treatment planning from the first access; and the implementation of a computerized cognitive behavioural therapy (cCBT) for patients with depression.

The Local Health Authority n. 9 – Treviso, in the Veneto Region, has implemented a new model of integrated care, improving the collaborative care between the primary and secondary care and giving to the patients the necessary support in the management of their disease. The actors involved are General Practitioners from two social district areas, psychologists and psychiatrists from the Mental Health Department of Treviso.

The new model includes two new services for what concerns the collaborative care: the videoconference tool and a new computerized therapy, the cCBT (computerized Cognitive Behavioural Therapy).

The videoconference tool is used by the General Practitioner to ask for support from the specialists. The General Practitioner can use the videoconference sessions to share the symptoms and the situation of his patients and define together the best follow up. Furthermore to permit the real integration of care, the Territorial Information System has been integrated with the primary care, giving to the General Practitioners the possibility to know the history of the patient, in every moment, and to have the necessary background to decide the right clinical path. Thanks to the new integrated relationship, the General Practitioners and the Mental Health Professionals share the same information about symptoms, drugs and actions taken and decide together the better way to take care of patients. Once a month, General Practitioners, care managers, and psychiatrists have video consultations discussing each individual patients' cases. This creates the opportunity for health professionals closely related to the case to discuss any problems with a psychiatrist whose role is more specialized and distanced from the case. Without videoconference, this level of cooperation and support is not feasible, because it would be too time consuming and not as efficient and focused.

The second service, the cCBT (computerized Cognitive Behaviour Therapy), is mostly a therapeutic service delivered through online sessions with a secure web-based online treatment platform that provides:

- Self-help modules that explain the situation the patient is living in and the relationship between his emotions and his daily life;
- Worksheets that actively involve patients regarding their moods, experiences, quality of sleep, planning for the future;

The duration of each module is about 30-45 minutes and the patient should complete one module per week. This tool supports the patient to deal with his disease, providing the method to recognize and change thought patterns, dysfunctional behaviours and perceived feelings, related to the disease of depression. The activities carried out through the modules and worksheets are intended to increase the capacity of people with depression to prevent relapse of depressive symptoms.

The new care model will be applied to a target of 200 patients followed for three or more months, to monitor the impact of their improved management and care, in term of organizational efficiency and clinical integration between different settings.

The clinician through a structured computerized questionnaire evaluates the patient, who refers to the General Practitioner to report a likely depression, that indicates if the patient will be recruited in the study. This assessment is shared, through the information system with the Mental Health Department who, subsequently, agrees on a time for a joint evaluation (by videoconference or at least through a phone discussion). If the two professionals agree on the diagnosis, they decide if the patient needs an intervention and/or a treatment plan. In the first case, the patient is paced in charge of the Mental Health Department, otherwise the General Practitioner supports the patient in the management of the disease. In the event of significant emergency, the General Practitioner has always the possibility to transfer the patient to the specialists' services.

In order to improve the collaborative care between the primary and secondary care and give new tools to the patients supporting them in management of their disease, the services proposed have the scope to allow the progressive education of General Practitioners in the identification of first symptoms of depression and give to the primary care the support of highly skilled specialists when required during the treatment of a patient.

Assessing the impact of the collaborative care model with videoconference and sharing of clinical data for patients with depression, the intervention aims to provide patients with high quality treatment in their immediate environment (General Practitioners' clinic), also extending the points of

 ISBN: 978-1-61208-470-1

access for first assessment (General Practitioners, Mental Health departments, social health districts).

Currently, 30 clinicians and 70 patients are enrolled and the services presented are implemented and used by all.

During the study, data of the enrolled patients and professionals are collected in a central database; therefore, at the end of the study, some qualitative analysis are going to be done related to the organizations that provide the services. These data will be the basis for an HTA analysis (Health Technology Assessment) that will be made at the end of the project with the objective of assessing the impact of organizational, economic and social services proposed, with a view to large-scale deployment services.

The four objectives proposed from the LHA n. 9 and reporting at the beginning of the article, are all achieved: at today a specific informative system has been put in place and has been shared between specialists services (Mental Health Department) and General Practitioners involved in the project. In addition, the system has been used to collect data (questionnaires and/or interviews) that are accessible to all professionals involved in the network.

All the General Practitioners involved in the project have been trained through the videoconference sections and meetings done during the study, enhancing their expertise in diagnosis of depression and evaluation of efficient therapeutic plans.

IV. CONCLUSION AND FUTURE WORKS

Depression is a common mental disorder that can be long lasting or recurrent, substantially impairing an individual's ability to function at work or school or cope with daily life. At a most severe level, depression can lead to suicide. When mild, people can be treated without medication but when depression is moderate or severe they may need medication and professional treatments. Depression is a disorder that can be reliably diagnosed and treated by non-specialists as part of primary health care. Specialist care is needed for the proportion of individuals with complicated depression or those who do not respond to first-line treatments [8].

Through the continuous sharing of data, the course of treatment is carried out as cooperation between the GP, the psychiatrist and the patient. By increasing cooperation between the different healthcare actors, the new integrated and collaborative care model aims to delivery of treatment, care and learning.

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 ISBN: 978-1-61208-470-1